ALTERNATIVE FUELS AND THE ENVIRONMENT

Info Package

September 2010

Profile of Dr. Janice Hamrin

Dr. Janice Hamrin, U.S. Speaker and Specialist on Alternative Fuels and the Environment

Dr. Jan Hamrin is CEO of HMW International, a consulting firm specializing in the implementation of sustainable energy policies. She also serves as Secretary General of the Environmental Tracking Network of North America (ETNNA). Jan recently retired as the President of the non-profit Center for Resource Solutions (CRS) that she founded and headed for eleven years. Her work has provided policy and technical support for the implementation of renewable energy, energy efficiency and climate programs throughout North America and globally.

Jan has been part of the China Sustainable Energy Program Renewable Energy Team since 1999 as well as working in Europe, Canada, India, Mexico, Thailand, Brazil and several other countries.

Previously Jan founded and served as Executive Director of the Independent Energy Producers Association and prior to that served as Manager of Solar Programs for the California Energy Commission. She has co-authored numerous publications and serves on Advisory Committees for the International Energy Agency, the US Department of Energy and others.

Dr. Hamrin received her Ph.D. in Ecology from the University of California at Davis, with emphasis on public policy evaluation of environmental and energy programs. Her MS was in Consumer Science also from the UCD and her BS was from the University of New Mexico.

Learning about Renewable Energy

Renewable Energy, also called alternative energy, is usable energy derived from replenish able sources such as the sun (solar energy), wind (wind power), rivers (hydroelectric power), hot springs (geothermal energy), tides (tidal power), and biomass (bio-fuels).

At the beginning of the 21st century, about 80 percent of the world's energy supply was derived from fossil fuels such as coal, petroleum, and natural gas. Fossil fuels are finite resources; most estimates suggest that the proven reserves of oil are large enough to meet global demand at least until the middle of the 21st century.

In contrast, *renewable energy* resources — such as wind and solar energy— are constantly replenished and will never run out.

Solar

Most renewable energy comes either directly or indirectly from the sun. Sunlight, or solar energy, can be used directly for heating and lighting homes and other buildings, for generating electricity, and for hot water heating, solar cooling, and a variety of commercial and industrial uses.

Wind

The sun's heat also drives the winds, whose energy is captured with wind turbines. Then, the winds and the sun's heat cause water to evaporate. When this water vapor turns into rain or snow and flows downhill into rivers or streams, its energy can be captured using hydropower.

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Inside this issue:

President Obama Announces Steps to Support Sustainable Energy Options

WASHINGTON – President Obama on May 5, 2009 announced steps to further his Administration's commitment to advance biofuels research and commercialization. Specifically, he signed a Presidential Directive establishing a Biofuels Interagency Working Group, announced additional Recovery Act funds for renewable fuel projects, and also announced his Administration's notice of a Proposed Rulemaking on the Renewable Fuel Standard.

"We must invest in a clean energy economy that will lead to new jobs, new businesses and reduce our dependence on foreign oil," said President Obama. "The steps I am announcing today help bring us closer to that goal. If we are to be a leader in the 21st century global economy, then we must lead the world in clean energy technology. Through American ingenuity and determination, we can and will succeed."

Biofuels Interagency Working Group
President Obama established a Biofuels Interagency Working Group, to be co-chaired by the Secretaries of Agriculture and Energy and the Administrator of the Environmental Protection Agency. This Working Group will work with the National Science and Technology Council's Biomass Research and Development Board in undertaking its work.

Recovery Act Funds For Biofuels Research and Commercialization
The President also announced that $786.5 million from the American Recovery and Reinvestment Act will be provided to accelerate advanced biofuels research and development and expand commercialization by providing additional funding for commercial biorefineries. These efforts will be overseen by the Department of Energy.

Notice of Proposed Rulemaking on the Renewable Fuel Standard
The President also announced the Environmental Protection Agency's Notice of Proposed Rulemaking on the Renewable Fuel Standard. This proposal outlines the EPA's strategy for increasing the supply of renewable fuels, poised to reach 36 billion gallons by 2022, as mandated by the Energy Independence and Security Act of 2007.

Increasing renewable fuels will reduce dependence of foreign oil by more than 297 million barrels a year and reduce greenhouse gas emissions by an average of 160 million tons a year when fully phased in by 2022.

Full version of this announcement is available at: http://www.whitehouse.gov/the_press_office/President-Obama-Announces-Steps-to-Support-Sustainable-Energy-Options/

U.S Government Bodies for Energy and Environmental Issues

Department of Energy (DOE)
Mission is to advance the national, economic, and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex.
Link: http://www.energy.gov/

Department of Energy (DOE), The Office of Energy Efficiency and Renewable Energy (EERE) invests in clean energy technologies that strengthen the economy, protect the environment, and reduce dependence on foreign oil.
Link: http://www.eere.energy.gov/

Environmental Protection Agency (EPA)
Mission is to protect human health and to safeguard the natural environment -- air, water and land -- upon which life depends.
Link: http://www.epa.gov/epahome/learn.htm

U.S. Department of Agriculture-Energy (USDA)
USDA has many programs to assist farmers, rural residents, and the nation to respond to energy-related issues and opportunities.
Link: http://www.usda.gov/wps/portal/usda/usdahome?navid=ENERGY&navtype=MS

Office of the Federal Environmental Executive is responsible for promoting sustainability and environmental stewardship throughout Federal government operations. Created by Executive Order in 1993, the Office is housed at the President's Council on Environmental Quality, is administered by EPA, and stewards the interagency Steering Committee on Federal Sustainability.
Link: http://ofee.gov/index.asp

Video
Renewable Energy and Climate Change
The development of clean renewal energy sources by countries around the world may help to avert or lessen climate change and meet growing worldwide energy needs
Link: http://www.america.gov/multimedia/video.html?videoId=1459170186

Leading Climate Change Expert Answers Your Questions

How do we know that the rise in greenhouse gases is changing our climate? What role does human activity play? How will climate change alter life on Earth?

Join the U.S. Department of State's climate change webchats and read more at:: http://www.america.gov/st/webchat-english/2010/September/20100908144500KseviR5.404299e-02.html#ixzz0zSyfNeJj

Alternative Energy Entrepreneurs

The "clean-tech sector" is hot among new business ventures. Entrepreneurs are developing renewable energy sources, designing "green buildings," and helping Americans save on energy bills.

These are the profiles of innovative entrepreneurs who are harnessing green technology to launch their businesses.

Luke Fishback, founder of VisibleEnergy, is a young entrepreneur with a good idea about energy conservation. It's cheap, easy to do and saves money on electricity use.

Complete story is available at: http://www.america.gov/st/econ-english/2008/March/20080311115809berehellek0.7334253.html

For many city dwellers, owning a car is both a blessing and a curse. Some urbanites get around mostly by public transportation, but occasionally need a car for shopping or for trips out of town. Maintaining a car is expensive, and finding parking on crowded city streets can be a nightmare.

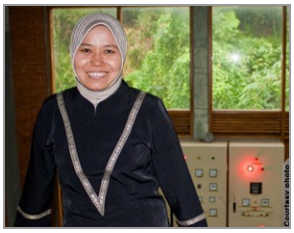
Two women, **Robin Chase** (photo) and Antje Danielson looked at this problem and saw a business opportunity, as well as a way to help the planet. In 1999, they wrote a business plan for Zipcar Inc., and in 2000, incorporated and began service in Boston. Since then, the company has grown rapidly to become the world's largest car-sharing business. Complete story is accessible at: http://www.america.gov/st/econ-english/2008/March/20080321160328berehellek0.5199091.html

In 2005, **Jeff Rogers** began planning for renovations to his Massachusetts house. He wanted the house to be able to produce its own electricity and heat, but found it difficult to get the design advice and building materials he needed.

So Rogers traded a career as an environmental engineer for another type of so-called "green" job — turning his family's 21-year-old hardware store and lumber yard into an environmentally friendly materials-supply business called New England Green Building. Complete story is accessible at: http://www.america.gov/st/business-english/2009/April/20090310103434AKIlennoCcM0.1001027.html

More articles on clean business and environment can be found at: http://www.america.gov/energy-entrepreneurs.html

Social Entrepreneur Powers — and Empowers — Indonesian Villages



That's been the life's work of Indonesian social activist and entrepreneur **Tri Mumpuni** — who, with her husband, Iskandar B. Kuntoadji, and their nonprofit IBEKA Foundation (*Yayasan Institut Bisnis dan Ekonomi Kerakyatan* or People's Business and Economic Institute), has built five dozen small power plants that also serve as engines for economic development.

President Obama also saluted her in his speech at the April 2010 Presidential Summit on Entrepreneurship, which brought together more than 200 business innovators, many of them, like Mumpuni, from countries with sizable Muslim populations.
Complete story is available at: http://www.america.gov/st/business-english/2010/August/20100810111423berehellek0.7898981.html

DID YOU KNOW?

U.S.-based venture capital investments in energy technologies rose six fold between 2003 and 2007, and strong growth is predicted in the future in an otherwise moribund U.S. economy.

Source: http://photos.state.gov/libraries/amgov/3234/Feb_09/econ_chart.jpg#popup

Video

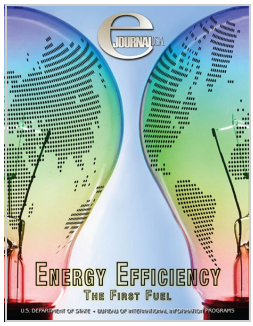
Tomorrow's Transportation PSA

A quick look at some of the hot cars that are using alternative fuels to drive America's new energy economy.

http://www.america.gov/multimedia/video.html?videoId=18135988001

E-JOURNALS

Energy Efficiency: The First Fuel



April 2009

Energy. Environment. Economics. All three forces contribute to standard of living and quality of life, and it has been true since the earliest humans learned to make fire and coax crops from the ground. The need to maintain a careful equilibrium among the three has taken on a new urgency in the 21st century. The carbon-based fuels that have fired productivity since the Industrial Age are dwindling in supply, changing the atmosphere, and contributing to climate change.

Development of clean, renewable energy sources to replace carbon-based fuels on a massive scale is underway on many fronts. Until these efforts identify means for large-scale production and distribution of alternative energy, efficient use of existing supplies is widely acknowledged as the fastest, cheapest, and cleanest way to meet future energy needs.

Squeezing greater productivity from current energy consumption requires no increase in energy generation. In that way, efficiency costs less and is more readily available than any other form of production. With no increase in emissions, efficiency is also the cleanest source of energy.

Increasing the efficient use of existing energy supplies is widely acknowledged as the fastest, cheapest, and cleanest way to meet future energy needs. Energy Efficiency: The First Fuel examines the strong U.S. record of tapping efficiency as a resource, and the accelerated efforts by individuals, organizations, and governments to squeeze greater productivity from all energy sources.

For more details please visit and download the e-journal at http://www.america.gov/publications/ejournalusa/0409.html

The Greening of U.S. Corporations

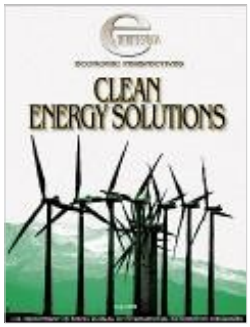
March 2008

This issue of e-Journal USA delves into what those familiar with the history of the environmental movement in the United States might see as a surprising trend — the way U.S. corporations in recent years have embraced environmentally friendly ways of doing business. What prompts a corporation to "go green"?

"We looked across our company and recognized that a focus on environmental technology could be a big business initiative for the company," said Jeffrey Immelt, the chief executive of General Electric, a leader in this field. "The concept we worked on at the time was this notion that green is green." So the environment has become a business opportunity, a chance to increase profits, the core of any business enterprise.

For more details please visit and download the e-journal at http://www.america.gov/publications/ejournalusa/0308.html

Clean Energy Solutions



July 2006

Projected dramatic increases in energy consumption in the coming decades, combined with a higher risk of climate change, require a massive global response based on technological innovation and the power of the marketplace. Experts and government officials describe the options before us, including renewable energy, novel vehicles, and low-carbon power generation, and discuss the best ways leading to a sustainable energy future.

As the various articles in this journal explain, these new technologies promise to raise standards of living around the world and are giving us the tools to build a brighter, cleaner, and more prosperous future.

For more details please visit and download the e-journal at http://www.america.gov/media/pdf/ejs/0706.pdf

ARTICLES

How Green is the Nuclear Option? / Nina Shen Rastogi. The Washington Post. Aug 10, 2010. pg. E.3

The author thought nuclear reactors were an absolute no-go for environmentalists. But she keeps hearing them touted as a clean energy source. What are nuclear energy's green credentials?

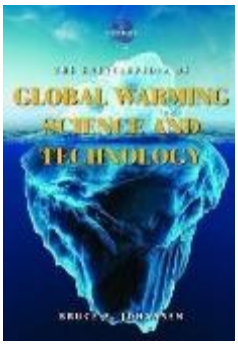
The Dawn of Federal Marine Renewable Energy Development / Peter J Schaumberg, Ami M Grace-Tardy. Natural Resources & Environment. Winter 2010. Vol. 24, Iss. 3; pg. 15, 6 pgs

The author said that federal regulation of greenhouse gas emissions is increasingly likely, and the focus on the renewable energy sector is sharpening. Since the recent rebirth of interest in renewable energy, onshore solar and wind power projects have enjoyed the spotlight because they employ proven technologies.

Alternative Energy for Transportation / Koji Omi. Issues in Science and Technology. Summer 2009. Vol. 25, Iss. 4; pg. 31, 4 pgs

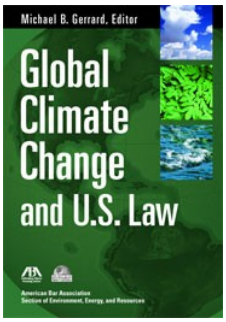
Advances in S&T have led to serious problems for humanity, such as climate change, ethical concerns in the biosciences, nuclear proliferation, and privacy and security issues. [...] it is essential to control the negative aspects on the one hand and develop the positive factors on the other. [...] largescale public transportation systems are applicable mainly in urban areas.

BOOKS



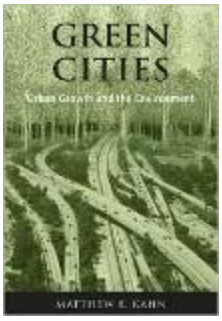
The Encyclopedia of Global Warming Science and Technology / Bruce E. Johansen. Greenwood Press/ABC-CLIO, c2009.

Comprehensive in scope and accessible to all reader levels, The Encyclopedia of Global Warming Science and Technology covers a vast range of topics, concepts, issues, processes, and scientists sifted and melded from the many scientific and technological fields. These include atmospheric chemistry, paleoclimatology, biogeography, oceanography, geophysics, glaciology, soil science, and more.



Global Climate Change and U.S. Law /Michael B. Gerrard (Editor). American Bar Association, 2007.

This comprehensive, current examination of U.S. law as it relates to global climate change begins with a summary of the factual and scientific background of climate change based on governmental statistics and other official sources. Subsequent chapters address the international and national frameworks of climate change law, including the Kyoto Protocol, state programs affected in the absence of a mandatory federal program, issues of disclosure and corporate governance, and the insurance industry. .



Green Cities : Urban Growth and the Environment / Matthew E. Kahn. Brookings Institution Press, c2006.

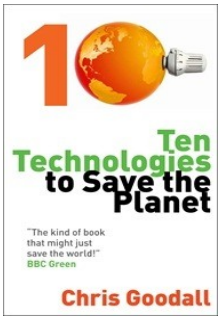
What exactly is a green city? What does it mean to say that San Francisco is greener than Houston, or that Vancouver is a green city while Beijing is not? When does urban growth lower environmental quality, and when does it produce environmental gains? These are the questions that drive this smart and engaging book.

Find more books from IRC Catalog at http://69.63.217.22/U10086Staff/OPAC/index.asp

If you want to have full text versions of these articles or other articles, please email us at: ircjakarta

COMING SOON TO IRC

Global Environmental Issues: Selections from CQ Researcher. CQ Press, 2010.



Ten Technologies to Save the Planet / Chris Goodall. Green Profile, 2008

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Information queries may be submitted to us by phone, fax, mail, and e-mail. You are also welcome to visit us by appointment for personal assistance with research.

Video
Environment: Solar Decathlon
The third Solar Decathlon in Washington showcases homes powered completely by the sun and educates the public about technologies that can reduce daily energy use.
Link: http://www.america.gov/multimedia/video.html#pi24

The climate is changing. What will it cost to confront the problem? What is the cost of inaction? Join the conversation and discuss courses of action.
Climate is on Facebook :
http://www.facebook.com/

Learning about Renewable Energy

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Hydropower
Flowing water creates energy that can be captured and turned into electricity. This is called hydroelectric power or hydropower. NREL does not perform any research in hydroelectric power technologies. For more information on hydroelectric power, see the Hydropower Basics from the U.S. Department of Energy's Wind and Hydropower Technologies Program.

Geothermal
Not all renewable energy resources come from the sun. Geothermal energy taps the Earth's internal heat for a variety of uses, including electric power production, and the heating and cooling of buildings. And the energy of the ocean's tides comes from the gravitational pull of the moon and the sun upon the Earth.

Ocean
The ocean can produce thermal energy from the sun's heat and mechanical energy from the tides and waves. NREL does not conduct research in ocean thermal energy or ocean mechanical energy. See the U.S. Department of Energy's Consumer Guide Web site for basic information ocean energy.

Biomass
Along with the rain and snow, sunlight causes plants to grow. The organic matter that makes up those plants is known as biomass. Biomass can be used to produce electricity, transportation fuels, or chemicals. The use of biomass for any of these purposes is called biomass energy.

Hydrogen
Hydrogen also can be found in many organic compounds, as well as water. It is the most abundant element on the Earth. But it does not occur naturally as a gas. It is always combined with other elements, such as with oxygen to make water. Once separated from another element, hydrogen can be burned as a fuel or converted into electricity.

More details are available at:

- http://www.nrel.gov/learning/re_basics.html
- http://search.eb.com/eb/article-9443101